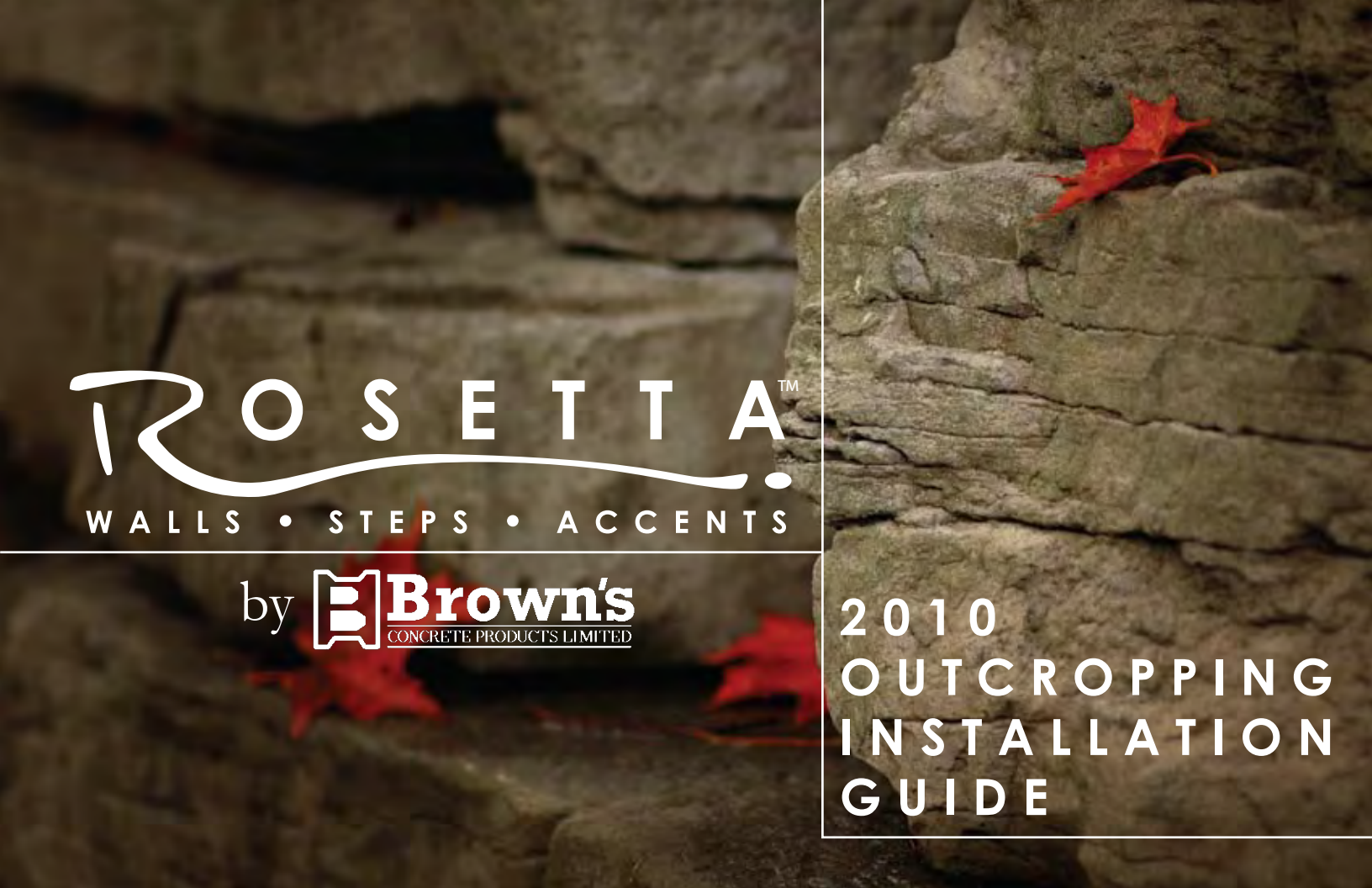


ROSETTA™

WALLS • STEPS • ACCENTS

by Brown's CONCRETE PRODUCTS LIMITED

2010 OUTCROPPING INSTALLATION GUIDE


WELCOME

Thank you for your interest in installing Rosetta's premium line of hardscape products. You will find that no other engineered system offers the ***natural beauty***, the ***design flexibility***, and the ***structural stability*** of the Rosetta Outcropping system. This installation brochure will give you the fundamental knowledge needed to construct ***stunning, quality*** retaining walls and landscape step systems that will last for generations to come.

www.brownsconcrete.com

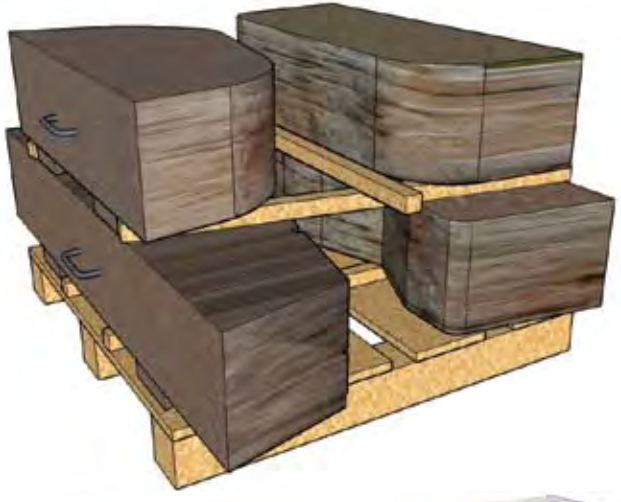
Blocks

Pallet A: **18 ft.²** (1.67 m²) **3885 lbs.** (1762 kg)

12" x 3'6" (31 cm x 107 cm)

12" x 4' (31 cm x 122 cm)

12" x 5' (31 cm x 152 cm)



12" x 5' 6" (31 cm x 167 cm)

Note: Color, texture and shape may vary. Please note that the blocks are based on imperial dimensions and therefore are titled as such - metric dimensions are for reference only

Pallet B: **18 ft.²** (1.67 m²) **3880 lbs.** (1760 kg)

6" x 2' (15 cm x 61 cm)

6" x 3' (15 cm x 91 cm)

12" x 3' (31 cm x 91 cm)

6" x 4' (15 cm x 122 cm)

12" x 4' 6" (31 cm x 136 cm)

12" x 6' (31 cm x 182cm)

Note: Color, texture and shape may vary. Please note that the blocks are based on imperial dimensions and therefore are titled as such - metric dimensions are for reference only

Pallet C: **18 ft.²** (1.67 m²) **4008 lbs.** (1817 kg)

18" x 5' (46 cm x 152 cm)

24" x 4' (61 cm x 122cm)

6" x 2' (15 cm x 61 cm)

6" x 3' (15 cm x 91 cm)

Note: Color, texture and shape may vary. Please note that the blocks are based on imperial dimensions and therefore are titled as such - metric dimensions are for reference only

Pallet A: Corner

18 ft.² (1.67 m²)
3885 lbs. (1762 kg)

12" x 3'6" (31 cm x 107 cm)

12" x 4' (31 cm x 122 cm)

12" x 5' (31 cm x 152 cm)

Same unit dimensions as in Pallet A, but with additional finish on back side (as seen above). For use at 90 degree corners (shown in adjacent picture) or as a coping unit.

12" x 5' 6" (31 cm x 167 cm)

Note: Color, texture and shape may vary. Please note that the blocks are based on imperial dimensions and therefore are titled as such - metric dimensions are for reference only

Steps & Accents

Consult with your local distributor to verify which of the following are available in your area.

A

Approximately
458 lbs (208 kg)
2 per random
step pallet

B

Approximately
600 lbs (272 kg)
2 per random
step pallet

D

Approximately
567 lbs (257 kg)
1 per random
step pallet

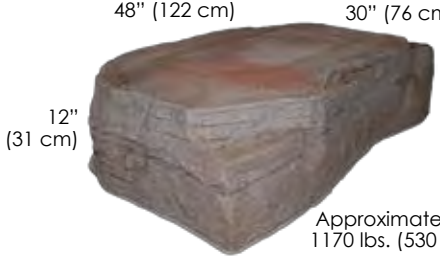
F

Approximately
512 lbs (232 kg)
1 per random
step pallet

Dimensional Step

Approximately
510 lbs (231 kg)

Accent Block



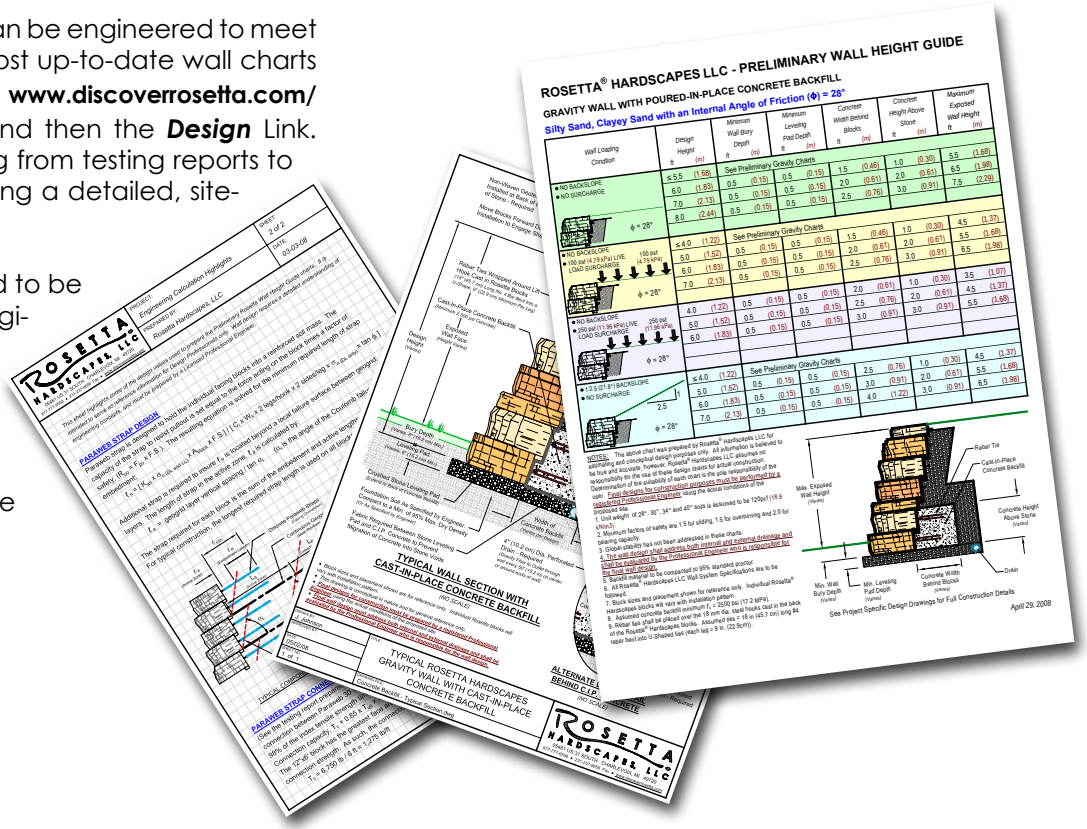
Approximately
1170 lbs. (530 kg)

*All Dimensions Nominal

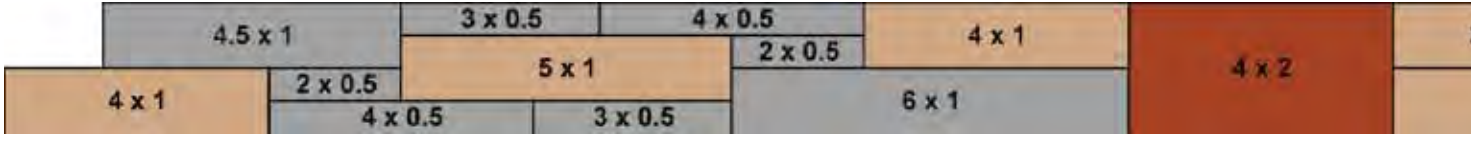
Engineering & Design

The Outcropping Wall system can be engineered to meet your specific needs. For the most up-to-date wall charts and design information, visit **www.discoverrosetta.com/engineering**, click on ***Rosetta*** and then the ***Design*** Link. There you will find tools, ranging from testing reports to CAD details, to assist in preparing a detailed, site-specific design for your wall.

Outcropping walls are intended to be designed by a professional engineer and built with appropriate construction oversight, giving you the look of a natural stone wall and the confidence of a fully engineered wall system that will stand the test of time.



Wall Layout & Design:

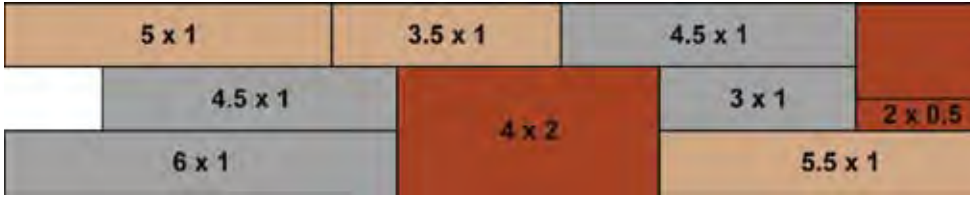


One of the great advantages of the Outcropping system is the ability of a designer or a contractor to lay out a wall profile in advance. This wall profile can not only be pre-approved by the client, but also saves the contractor time and effort during installation.

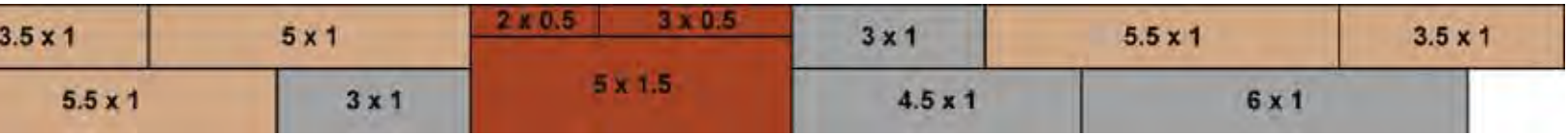
The following patterns are examples of optimized wall lay-outs for simple wall sections - each pattern is 90 square feet (8.36 square metres) and uses 2 A Pallets, 2 B Pallets and 1 C Pallet.

For more complex wall sections, we recommend using the "Rosetta custom layout and design software" available on our website. Visit ***www.brownsconcrete.com***, click on ***Rosetta*** and then the ***Design*** Link.

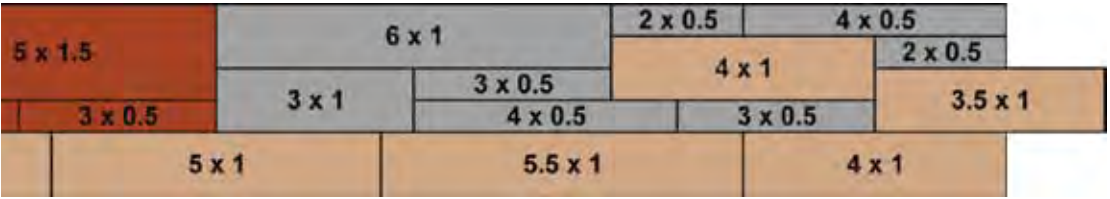
Please note that the length dimensions shown for Outcropping blocks are nominal. The actual length of the constructed wall will vary slightly from the pattern dimensions shown.



2’ x 45’

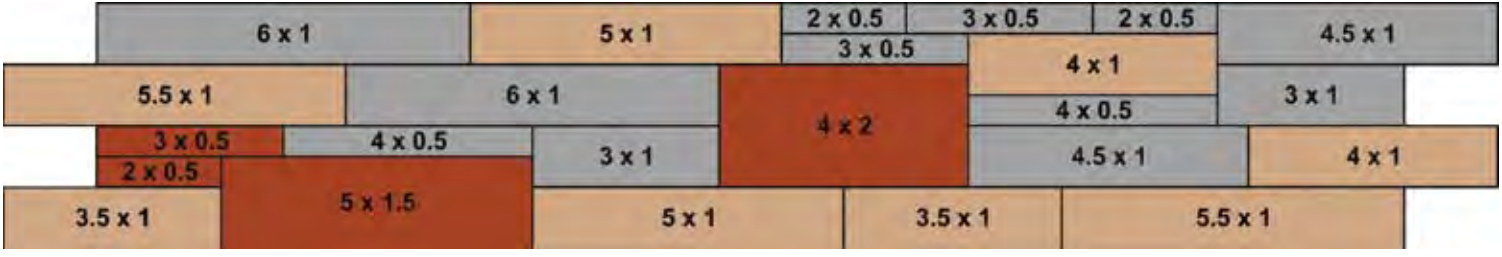

3.5 x 1
5 x 1
2 x 0.5
3 x 0.5
3 x 1
5.5 x 1
3.5 x 1
5.5 x 1
3 x 1
5 x 1.5
4.5 x 1
6 x 1

3’ x 30’

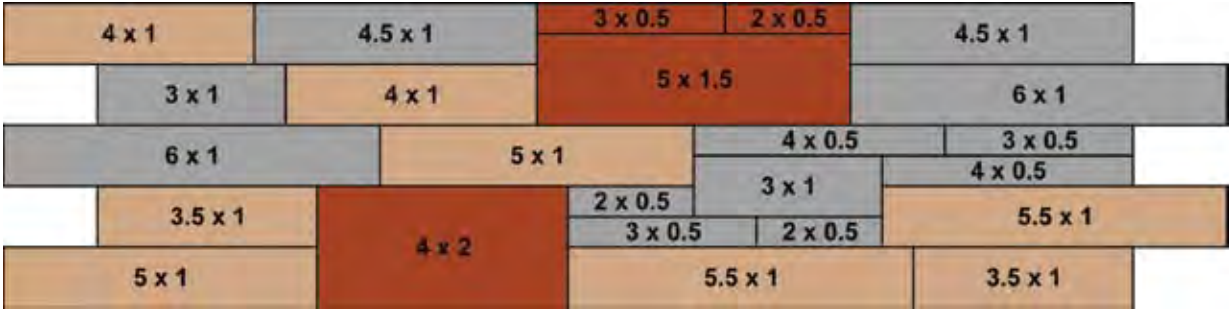

5 x 1.5
6 x 1
2 x 0.5
4 x 0.5
2 x 0.5
4 x 1
3 x 1
3 x 0.5
3.5 x 1
3 x 0.5
4 x 0.5
3 x 0.5
5 x 1
5.5 x 1
4 x 1

Sample Patterns

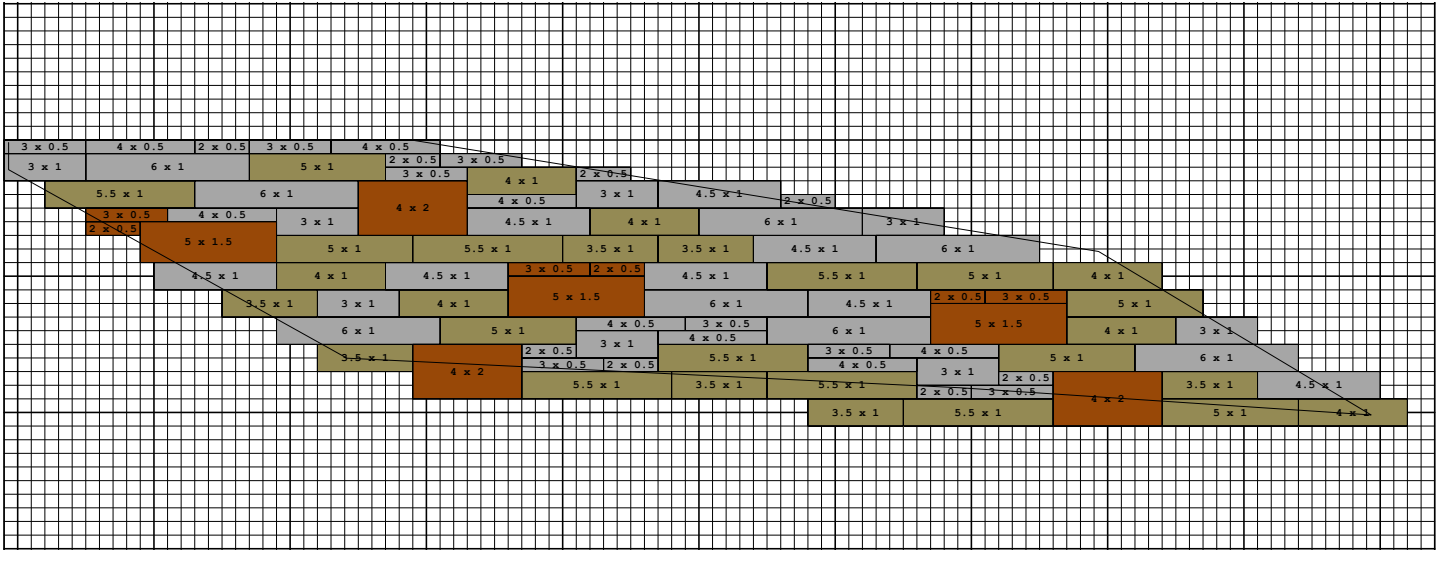
4' x 22.5'



5' x 18'



Sample Patterns:



Block Counts:	**Extra Blocks**			
Pallet A = 7	6" x 2` = 0	12" x 3.5` = 0	12" x 5.5` = 0	Corner Blocks = 0
Pallet B = 8	6" x 3` = 0	12" x 4` = 0	12" x 6` = 0	
Pallet C = 3	6" x 4` = 0	12" x 4.5` = 0	18" x 5` = 0	
Total Wall Area = 324.00 Sq Feet	12" x 3` = 0	12" x 5` = 0	24" x 4` = 0	

Sample output from the ***Rosetta custom layout and design software***

Pre-Construction:

Develop a project health and safety plan. Be sure to follow the Ontario MoL Occupational Health and Safety Act with emphasis on the following regulatory requirements: personal protective equipment; motorized equipment; soil types (relates to maintaining safe excavation slopes); fall protection; and, cables, slings and rigging.

Review the design drawings. Make sure that the design takes into account site-specific soil conditions, proposed site layout (location of items that could impact the stability of the wall), railings or guards (if required), and grading (surface water runoff flow directions). Make extra copies of the wall layout for use during construction.

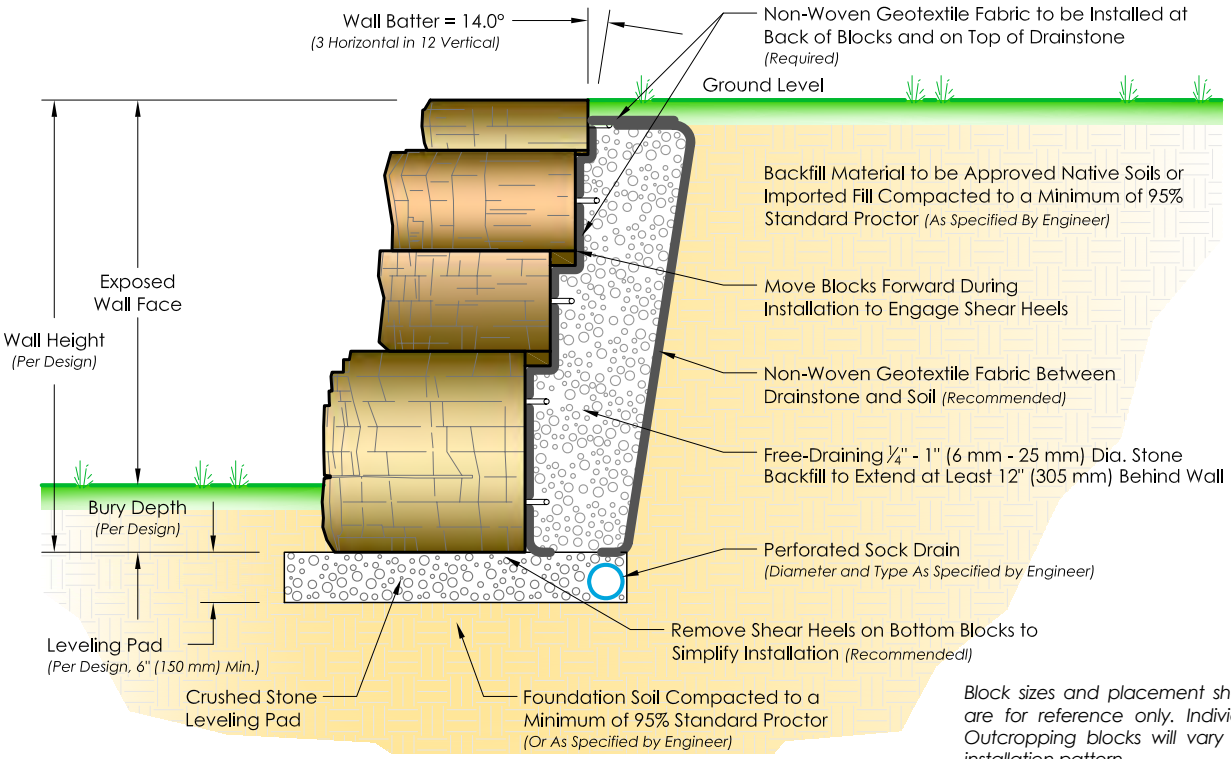
Note: This guide is intended to supplement a detailed, site-specific wall design prepared for your project by a Professional Engineer. The actual design for your project supersedes any recommendation presented herein.

Attain a building permit (where necessary). The Ontario Building Code requires that a building permit be obtained for walls in excess of 3' 3" (1 metre) that are adjacent to: (A) public property; (B) access to a building; or, (C) private property to which the public is admitted.

Develop a construction and staging plan. Designate access and egress routes, as well as storage areas. Consider how to control surface water during construction.

TYPICAL GRAVITY WALL SECTION

(NO SCALE)



Block sizes and placement shown are for reference only. Individual Outcropping blocks will vary with installation pattern.

(See engineering design for project specific requirements)

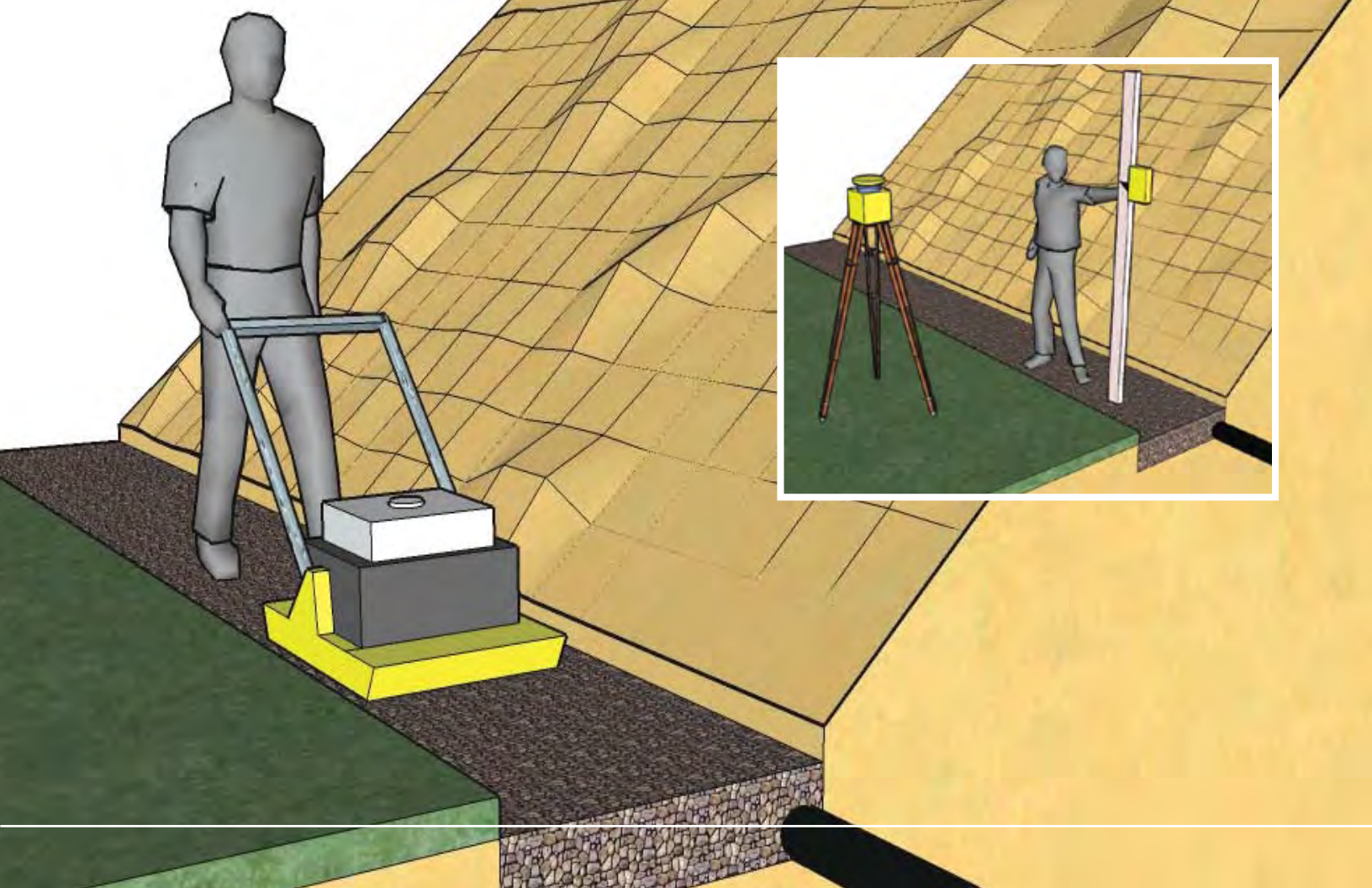
Step 1. Base Preparation

Proper base preparation is one of the most critical elements of retaining wall construction. The retaining wall is only as stable as the foundation it is placed on. If condition of foundation soils are unknown or of concern, consult a qualified geotechnical engineer.

First, ***excavate for the leveling pad and buried portion of the wall.*** The levelling pad is typically 6" (153 mm) deep, and should be a minimum of 32" (813 mm) wide. The minimum bury depth is 6" (153 mm), and increases with the height of the wall. Once the trench is excavated, any debris or deleterious materials need to be removed, and the foundation soils need to be compacted to at least 95% Standard Proctor. Ensure the back of the trench is at a safe angle based on native soil and hydrogeologic conditions.

Place 4" (102 mm) diamater (or greater if specified) perforated sock drain at the back of the excavated trench. Make sure drain has a long term gravity outlet (either to daylight or an approved catch basin).

Place clean crushed stone into excavated trench. Level and compact stone to the design thickness. Check level with a laser or transit. Note: Take time to make sure the base is accurately leveled; this will allow the wall to be installed much more efficiently.



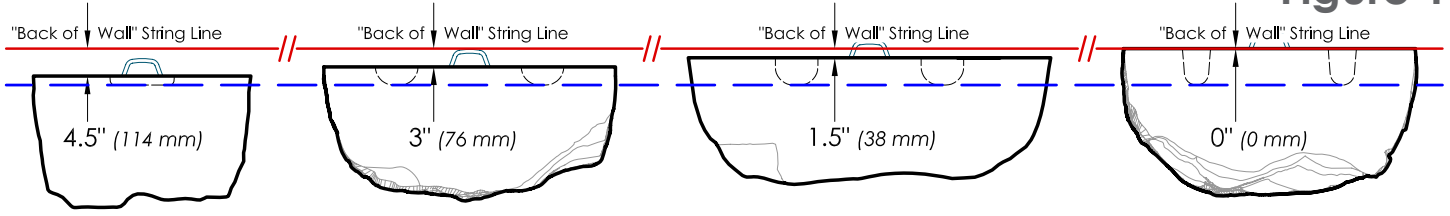
Step 2. Place Bottom Course

Proper placement of the bottom course of blocks is critical in ensuring the overall appearance and integrity of the finished product. Take extra time on this step and the rest of the project will go smoothly. At this point you need to determine the best starting point for the wall. If you have a fixed point, such as a building corner or a 90° corner in the wall, you will want to start the wall from that point and work your way out; this will minimize cutting of blocks. If there are no fixed points, start the wall at the lowest design elevation, as it is easier to step the base up than it is to step the base down.

Nearly all segmental wall system have a built in batter to provide better wall stability. With Outcropping, the batter is 14 degrees, which equals 3" (76mm) of setback for every vertical foot (305 mm) up.

One of the unique features of the Outcropping system is the multiple block heights. To provide a uniform wall batter with multiple height blocks, the setback of the blocks varies proportionally with the block height. The setback in blocks is achieved with shear heels which are cast directly onto the back of the Outcropping blocks. For a 6" high block, the shear heels are 1.5" (38 mm)deep (1/2 times 3"). For a 12" high block, the shear heels are 3" (76 mm) deep (1 times 3"). For a 24" high block, the shear heels are 6" (153 mm) deep (2 times 3").
To ensure proper wall alignment, and account for the multiple height blocks and varying setbacks, you have to adjust the bottom row of blocks based on their height. Setup a traditional string line for the back of the wall, then offset the blocks per the following:

Figure 1.



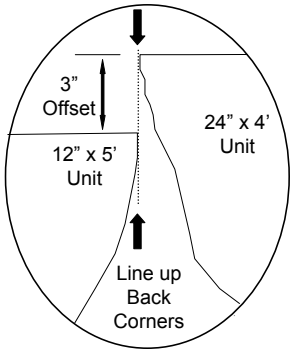
6" HIGH BLOCKS
Offset Back of Block 4.5"
From String Line

12" HIGH BLOCKS
Offset Back of Block 3.0"
From String Line

18" HIGH BLOCK
Offset Back of Block 1.5"
From String Line

24" HIGH BLOCK
Set Back of Block Flush
With String Line

When you follow these simple steps, the bottom blocks are properly placed and the rest of the wall stacks up straight and true.



If you push the stones tight together, you will-lose length in the wall and pieces placed on top will not fit in right.

Figure 2.

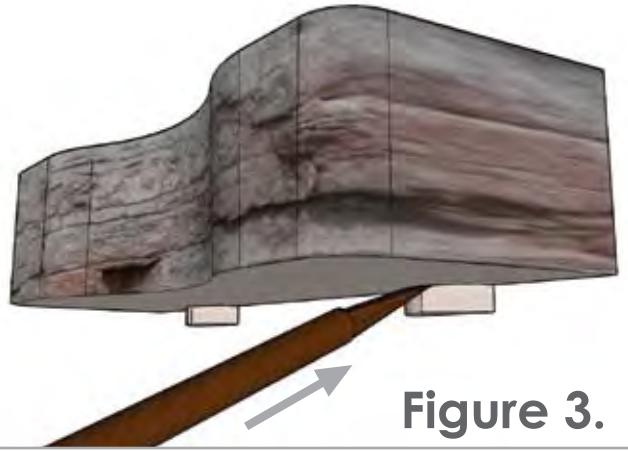


Figure 3.

You may find it useful to ***remove the shear heels from the blocks to be placed on the bottom course.*** This can be done using a demolition bar. ***(see Figure 3.)*** Be sure to do this in a safe manner, keeping your body away from potential falling hazards. Also make sure the area behind the stone is clear.

Using an appropriately rated skid steer or small excavator and the Rosetta Lifting Device, ***place each block along the string line according to Figure 1.*** Be sure that the safety latch on the Lifting Device is engaged before lifting each block. Use a bar to make small adjustments to bring the blocks into line.

Please note that the Rosetta blocks have an irregular taper on the sides. When placing the bottom course of blocks (as shown on Figure 1), make sure the back corners of the blocks line up with each other perpendicular to the string line; do not abut the back corner of the forward set block directly against the adjacent block as you will loose some length in the wall which will impact placement of subsequent blocks. (See Figure 2.)

After placing each block, ***check for level both front to back and side to side***. If the block is out of level, either pick up the block and correct the base material, or tap it into place using the setting machine and a block of wood (to avoid marring the wall stone).

Continue following the above procedures until the entire course of blocks has been placed.

Step 3. Place Upper Courses

Placing the next course of blocks is similar to placing the first course. The primary difference is that you must ***engage the shear heels of the upper blocks with the backs of the lower blocks.***

Position the clevis in the Rosetta Lifting Device in such a way that the front of the block is slightly higher than the back of the block.

Hold each block behind and approximately 1/2" (13 mm) above the block below.

Swing the block toward the face of the block below until both shear heels engage.

Set the block down and make final adjustments with a large pry bar. Do not leave any gaps between blocks unless you are constructing a planter pocket.

For safety reasons, do not stack blocks more than Two feet (610 mm) high before backfilling (see Step 4).

Step 4. Backfill

Appropriate selection and placement of backfill is necessary for the structural integrity of the wall. ***Only use backfill materials that are consistent with the wall design***. **For safety reasons, do not stack blocks more than two feet (610 mm) high before backfilling. See Figure 4.**

Before placing backfill materials, ***place a layer of non-woven geotextile fabric along the back of the blocks.*** The purpose of this geotextile is to keep soils from washing out through the small voids between the blocks.

Place clean drainstone a minimum of one foot (305 mm) out from behind the wall. This creates a continuous drainage course for any water to rapidly reach the sock drain. As hydrostatic pressure is the number one cause of retaining wall failure, the proper installation of the drainstone is critical in keeping backfill materials dry and structurally sound.

It is recommended that non-woven geotextile also be placed at the back of the drainage course to prevent the drainstone from being plugged up by the backfill soil; however, this can be excluded upon approval by the engineer.

Use either approved native soil or imported fill as backfill between the drainstone and back of excavation. Beginning at the back of the clean stone and working away from the wall, ***place and spread backfill soils (so as not to impact the wall).***

Compact soils in lifts of appropriate depth for the compaction equipment being used (typically 4-12" (102-305 mm)). Backfill materials must be compacted to 95% Standard Proctor. Generally, you should operate compaction equipment parallel to the face of the wall. Start at the back of the blocks, and work your way away from the wall in parallel lines until you reach undisturbed soils. Continue placing and compacting backfill materials until you approximately reach the top of the upper course of blocks.

Repeat steps three and four at no more than two foot high intervals until you have reached finish grade for the wall.

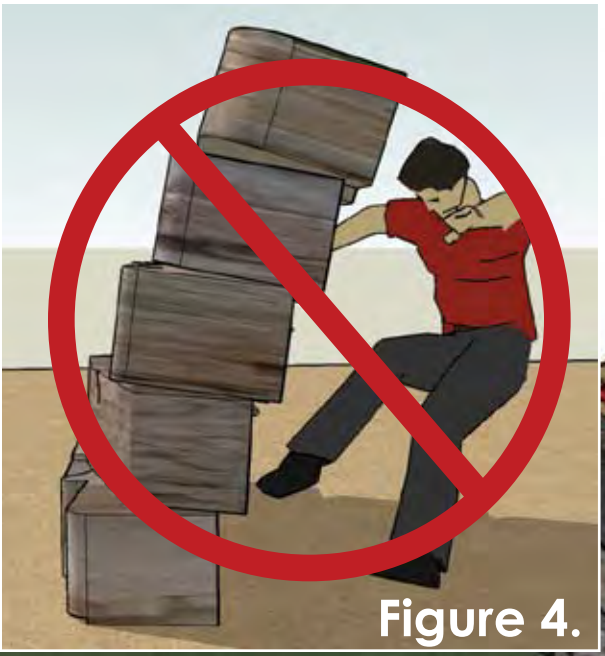


Figure 4.

Step 5. Finishing The Wall

Completing a few simple tasks near the end of the project will ensure that the wall will function properly and look good for years to come.

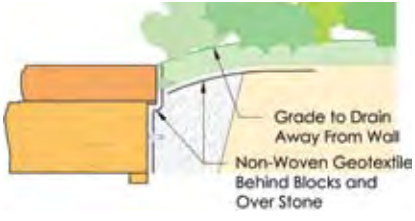
Make sure that the drain pipe is tied into a catch basin or run to a long term daylight opening. If you are using flexible drainpipe behind the wall, convert it to Schedule 40 PVC or equivalent before outleting from behind the wall. This will insure that the pipe is not easily crushed during future construction.

Place non-woven geotextile fabric over the clear stone. At 6" (153 mm) from the top of the wall, wrap the geotextiles over the top of the drainstone layer to allow for the placement of overlying landscape or other materials.

Grade the area above the top of the wall in such a way that water either runs over the top of, or towards a swale that drains away from, the wall. Never leave the top of a wall graded in such a way that surface water will pond behind the wall. If future grading is to take place by others, you may want to have a responsible party sign off (that there was proper surface water drainage at the completion of the wall installation).

FINISHING OPTIONS

Plant appropriate vegetation on the back of the wall



Use Random steps as top blocks, espescially when the grade falls away at the ends of the wall

Place pavers flush with the back of the Outcropping Blocks

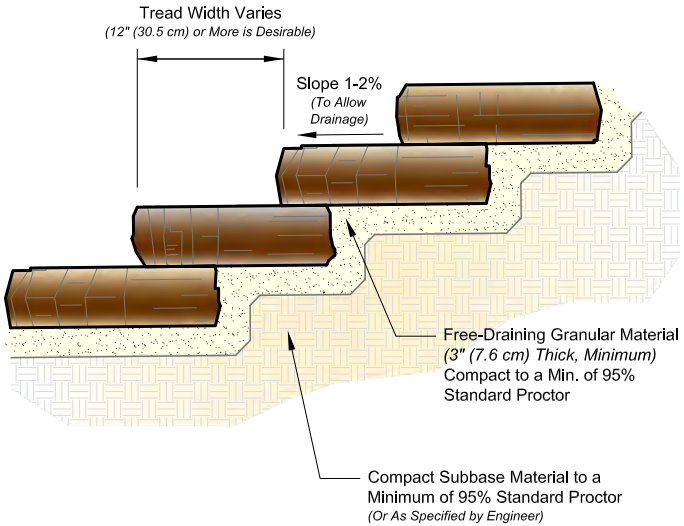
Grade slope to rise above top blocks, giving the look of **natural outcropping** in the bank. (Design must account for surcharge loading)

Special Details

Step Installation:

Begin the step installation process by measuring the total rise required and calculating the number of steps to be used. Each step has a 7" (178 mm) rise, but should be sloped approximately 1/2" (13 mm) such that the back of the step is higher than the front of the step; this sloping will facilitate water drainage. With appropriate sloping, the net rise of each step is 7 1/2" (191 mm). Divide the total rise by the applicable net rise to get the number of steps required.

Next, ***calculate the average tread width***. Generally, when the grade allows, a 12" (305 mm) or wider tread is desirable to facilitate full foot placement. To calculate the average tread width, divide the total allowable horizontal run minus the width at the top step, by the number of steps minus one (the one less will account for the top step).



Excavate and grade the area for the first step. Steps should be placed on at least 3" (76 mm) of free draining soil, such as sand or pea-stone. Compact soil to a minimum of 95% Standard Proctor.

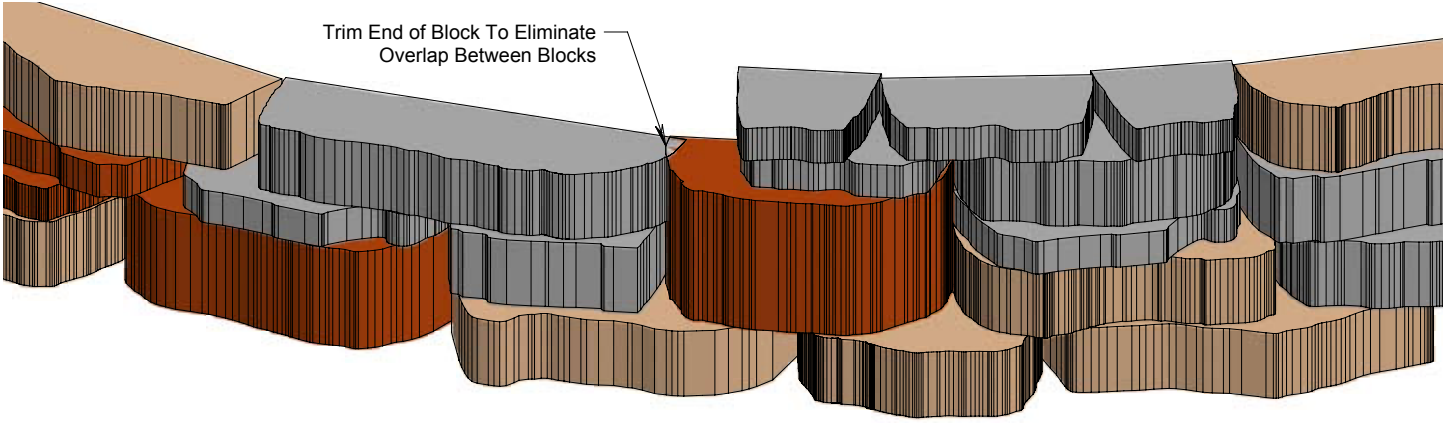
Place step with either forks or straps using a small excavator or skid-steer. Practice safe handling procedures during this process.

Fill behind each step with free draining soil and compact to 95% Standard Proctor. Remember to slope fill to allow for proper drainage when next step is placed. Continue placing steps in this manner until finish grade is reached.

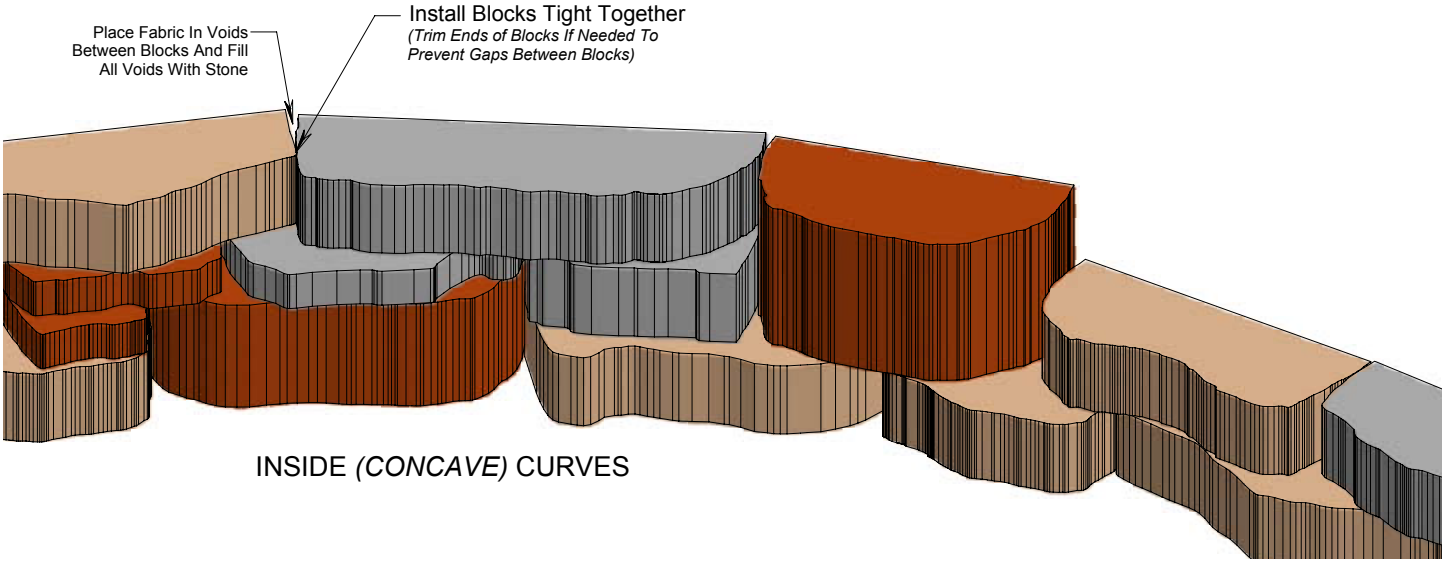
Curves

Outcropping Blocks have shear heels which provide a setback from lower blocks in the wall, causing the wall to batter back. This batter is important to the engineering design of the wall, and it must be accounted for during construction of a curved wall section.

If you are constructing an **outside** (convex) curve, the wall batter will cause the blocks higher in the wall to have a shorter radius around the curve than lower blocks. This will cause the higher blocks to "grow" in the wall layout pattern. (This is similar in concept to the inside lane of a race track being shorter than the outside lane.) The result is a potential overlap between some of the blocks in the wall. The best way to deal with this overlap is to sawcut one (or both if necessary) ends of smaller blocks, which allows the blocks to fit tight together and all the shear heels to be properly engaged. This sawcut is typically made on an angle to match the taper on the side of the block you are abuting.



OUTSIDE *(CONVEX)* CURVES



If you are constructing an **inside** (concave) curve, the wall batter will cause the blocks higher in the wall to have a longer radius around the curve than lower blocks. The important step when constructing an inside curve is to keep all blocks tight together. In most cases, the blocks will touch somewhere along the sides of the blocks, not at the back of the blocks. If needed, you can trim the ends off some blocks to prevent gaps from opening up between blocks. When constructing a curve with a short radius, voids may form at the back of the wall where two blocks meet. If this happens simply fill the void areas with drainstone.

Following these steps, Outcropping walls can be properly constructed to a wide range of curves.

Water Features

Rosetta uses the word transformation when it comes to describing the profound change that occurs when a pond or water feature has been installed. The beauty will leave you speechless. There is a dramatic sense of peace created as the water cascades through your water feature. Design options are limitless: anything is possible.

Visit your local Rosetta dealer, or our web site and obtain a copy of the Rosetta Pond Kit Installation Guide.

Thank you for taking the time to familiarize yourself with the many benefits of the Outcropping system. We are committed to helping you design and install the finest retaining wall and step systems available today. For more information please visit our website at **www.brownsconcrete.com** .

www.brownsconcrete.com

ROSETTA™

by Brown's
CONCRETE PRODUCTS LIMITED

12-08-10000